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(54) **OPTICAL MEMBER FOR LASER LIGHT**

## (57) Abstract:

**PURPOSE:** To impart excellent laser light resistance to the optical member for laser light over a long period by using a high-purity synthetic quartz glass material freed of oxygen defects and in which appropriate amts. of the OH group and occluded hydrogen are incorporated in the glass structure to form the member.

**CONSTITUTION:** A high-purity synthetic quartz glass material contg.  $\approx 100$ ppm OH group, having no oxygen defects in its glass structure and in which gaseous

hydrogen is occluded is prepared. The content of the gaseous hydrogen is appropriately set so that the number of the hydrogen molecules to be liberated when the glass material is heated to 1000°C under vacuum is controlled to  $\approx 1 \times 10^{20}$  (molecules/m<sup>2</sup>). An optical member for laser light to be used for the laser light over the wavelength region at  $\leq$  about 400 nm is made from the quartz glass material. A decrease in transmissivity, variations in refractive index, etc., are not caused in the optical member even if the member is irradiated with excimer laser light for a long time.

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